

REMARKS

Applicant respectfully requests the Examiner's reconsideration of the present application, as amended.

Summary of Office Action

Claims 1-20 are pending.

Claims 1-3, 5-7, 9-10, 12, 15-16, and 18 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 5,274,702 of Rosch, et al. ("Rosch") in view of Millman, et al., *Integrated Electronics: Analog and Digital Circuits and Systems*, "The CB Configuration", 1972, p. 254 ("Millman").

Claims 4, 8, 11, and 17 were rejected under 35 U.S.C. § 103 as being unpatentable over Rosch in view of Millman and further in view of Spanos, "University of California at Berkeley EE 105: Microelectronic Devices and Circuits" (Fall 1999).

Claims 13, 14, 19, and 20 were indicated as being allowable if re-written.

Summary of Amendments

Claim 6 was amended to correct an obvious enumeration error.

Applicant submits the amendments to the claims do not add new matter.

Response to 35 U.S.C. § 103 Rejections

Claims 1-20 were rejected under 35 U.S.C. § 103 as being unpatentable over various combinations of Rosch, Millman, and Spanos. Applicant

respectfully submits the claims as amended are patentable under 35 U.S.C. § 103 in view of the cited references.

With respect to claims 1, 5, 9, and 15, applicant respectfully submits *the cited references do not teach or suggest coupling an outgoing audio signal to a subscriber line through either 1) a plurality of transistors coupled in a common base configuration or 2) a common base isolation stage.*

Rosch was cited for disclosing a telephone line interface circuit that receives an outgoing audio signal from the central office on a receive line which is coupled to the subscriber line through amplifier circuits. Rosch includes a disclosure of a subscriber line interface circuit having a sense network (Rosch, Fig. 2) and a line drive circuit (Rosch, Fig. 3). The line drive circuit is coupled to the tip and ring wires of the telephone line via the sensing network. The sensing network senses the tip and ring lines to determine the subscriber line differential current (ID), loop current (IL), common mode voltage (VCM), and common mode current (ICM). A digital control circuit within the linefeed driver monitors the sensed IL, ICM, and VCM and adapts the line interface circuitry. (Rosch, col. 11, lines 7-16).

Millman was cited as teaching the use of common base transistor configurations to match a low impedance source to a high impedance load.

Spanos was cited as teaching the similarity between common base amplifiers and common gate amplifiers.

The Examiner stated "The circuit of figure 3 (Rosch) depicts amplifiers 132 and 134 connected to low impedance sources superposed [sic] with the receive path signal (i.e., audio signal) driving the tip and ring lines (i.e., high impedance

load/subscriber line) respectively.” (7/30/2003 Office Action, pgs. 2-3). The Examiner appears to be suggesting that the outgoing audio signal and control signals are superimposed on the same signal lines.

Applicant traverses the Examiner’s characterization of Rosch. Rosch’s *audio signals and linefeed control signals are clearly carried by distinct signal lines*. Referring to Figure 3, Rosch’s outgoing audio signal is carried by line 128 to amplifier 132 (an inverted version is carried by line 130 to amplifier 134). Digital control circuit 152 generates the appropriate control signals 154, 156, 162, and 164 for controlling current sources 142, 144, 148, and 150 in response to the sensed ID, IL, and VCM. Current sources 142, 144, 148, and 150 vary the tip and ring D.C. line voltages. (Rosch, col. 11, lines 24-39; col. 11, line 40 - col. 12, line 7). *Clearly, the outgoing audio signal (128, 130) is not superimposed on any of the control signal lines 154, 156, 162 or 164 carrying control currents.*

The Examiner has also combined Millman and Rosch to arrive at the conclusion “it would have been obvious...to use a plurality of transistors, coupled in the common-base configuration, for the line driving amplifiers to match a low impedance source with an audio signal super[im]posed on top to a high impedance load as taught by Millman”. Applicant respectfully disagrees.

In order to sustain a rejection under 35 U.S.C. § 103, three criteria must be met:

First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. *Second*, there must be a reasonable expectation of success. *Finally*, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant’s disclosure

(*In re Vaeck*, 20 USPQ2d 1438 (Fed. Cir. 1991))(emphasis added)

The Examiner appears to be suggesting that the amplifiers 132, 134 of Rosch simply be replaced with transistors in a common base configuration to support superimposing the outgoing audio signals on the control signals “as taught by Millman”. As stated above, however, none of the cited references teaches or suggests superimposing the outgoing audio over the control signals. Thus the Examiner’s motivation appears to be non-existent.

Finally, applicant notes that the combination of cited references promulgated by the Examiner does not teach or suggest such a substitution and that the Examiner’s “motivation” stems from the impermissible use of hindsight of applicant’s disclosure rather than any of the references.

Applicant respectfully submits none of the cited references, alone or combined, teaches or suggests *coupling an outgoing audio signal to a subscriber line through either 1) a plurality of transistors coupled in a common base configuration, or 2) a common base isolation stage.*

In contrast, claim 1 includes the language:

1. A method comprising the steps of:
 - a) receiving an outgoing audio signal; and
 - b) *coupling the audio signal to a subscriber line through a plurality of transistors coupled in a common base configuration.*

(Claim 1)(emphasis added)

Claims 5, 9, 15, include the language:

5. A method comprising the steps of:
 - a) receiving linefeed driver control signals and outgoing audio signals on a same plurality of signal lines; and
 - b) *providing the outgoing audio signals to a subscriber line through a common base isolation stage.*

(Claim 5)(emphasis added)

9. A subscriber line interface circuit apparatus, comprising:
a first circuit for coupling a received outgoing audio signal to a subscriber line, *wherein the first circuit couples the received outgoing audio signal to the subscriber line through a common base isolation stage.*

(Claim 9)(*emphasis added*)

15. A subscriber line interface circuit apparatus, comprising:
a signal processor providing an outgoing audio signal; and
a linefeed driver coupled to receive the outgoing audio signal,
wherein the linefeed driver couples the received outgoing audio signal to a subscriber line through a common base isolation stage.

(Claim 15)(*emphasis added*)

Applicant thus respectfully submits claims 1, 5, 9, and 15 are patentable over the cited references under 35 U.S.C. § 103. Given that claims 2-4 depend from claim 1, claims 6-8 depend from claim 5, claims 10-14 depend from claim 9, and claims 16-20 depend from claim 15, applicant submits dependent claims 2-4, 6-8, 10-14, and 16-20 are likewise patentable over the cited references under 35 U.S.C. § 103.

In view of the Examiner's characterization of Rosch, applicant will further address claims 2 and 5 specifically. Rosch's audio signals and linefeed control signals are carried by distinct signal lines. Even assuming *arguendo* that the Examiner's proposed substitution of Rosch's amplifiers 132, 134 with common base configured transistors could work (i.e., "reasonable expectation of success"), applicant submits that the combination of the references still would not teach or suggest superimposing the outgoing audio over the control signals.

Thus *none of the cited references alone or combined teaches or suggests receiving linefeed driver control signals and outgoing audio signals on a same plurality of signal lines.*

In contrast, claim 5 includes the language as follows:

5. A method comprising the steps of:

- a) *receiving linefeed driver control signals and outgoing audio signals on a same plurality of signal lines; and*
- b) *providing the outgoing audio signals to a subscriber line through a common base isolation stage.*

(Claim 5)(*emphasis added*)

Applicant notes dependent claim 2 similarly includes the language:

2. The method of claim 1 further comprising the step of:

- c) *receiving linefeed driver control signals for controlling battery feed to the subscriber line, wherein the outgoing audio signal and the linefeed driver control signals are received on the same signal lines.*

(Claim 2)(*emphasis added*)

Thus applicant submits yet another basis for the patentability of claims 2 and 5-8 in view of the cited references has been provided.

Applicant respectfully submits the rejections under 35 U.S.C. § 103 have been overcome.

Conclusion

In view of the arguments presented above, applicant respectfully submits the applicable rejections and objections have been overcome. Therefore all of claims 1-20 as amended should be found to be in condition for allowance.

If there are any issues that can be resolved by telephone conference, the Examiner is respectfully requested to contact the undersigned at (512) 306-9470.

Respectfully submitted,

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